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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,434	04/25/2000	Kurt Spears	10001388-1	8378

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FORT COLLINS, CO 80527-2400

EXAMINER

JERABEK, KELLY L

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/558,434

Applicant(s)

SPEARS ET AL.

Examiner

Kelly L. Jerabek

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1,4, and 5 rejected under 35 U.S.C. 103(a) as being anticipated by
Pool US 5,308,970.**

Re claim 1 Pool discloses in figure 1 a CCD image sensor (10) that is exposed to light from an image (col. 1, lines 10-13). A first portion of charges (42) from the array of photosensors is shifted to an amplifier via a common output (col. 3, line 68, col. 4, lines 1-2; fig. 4: 42 and 48). Also a second portion of charges (44) is dumped into a sink (col. 3, lines 61-67; fig. 4: 44 and 54). Pool also states that image data may be read out of register (44) and "dark current" charge may be dumped from register (42) into the sink (54) (col. 4, lines 2-4). Therefore, the first portion of charges (42) may be dumped and the second portion of charges (44) may be shifted to the amplifier. As far as exposing the array of photosensors to light from the image again, the examiner takes Official Notice that it is well known in the art for imaging sensors to be exposed to light during

different intervals. It would have been obvious to one of ordinary skill in the art at the time of invention for the imaging sensor disclosed by Pool to be exposed to light on several different occasions.

Re claim 4, the examiner takes Official Notice that it is well known in the art for imaging sensors and the images that they are capturing to both stay stationary between the steps of exposure. It would have been obvious to one of ordinary skill in the art at the time of invention for the imaging sensor of Pool to capture multiple images in which there was no relative movement between the array of photosensors and the image between the steps of exposing.

Re claim 5, the examiner takes Official Notice that it is well known in the art for either the imaging sensors or the images that they are capturing to move between the steps of exposure. It would have been obvious to one of ordinary skill in the art at the time of invention for the imaging sensor of Pool to capture multiple images in which there was relative movement between the array of photosensors and the image between the steps of exposing.

Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Pool in view of Hashimoto et al. US 4,689,686.

Pool teaches a CCD with bi-directional readout as in claim 1, but does not state that the step of dumping consists of shifting charges from the array of photosensors at a shift rate that is higher than a normal shift rate.

Hashimoto discloses an image pickup apparatus (fig. 2). The image pickup apparatus includes a drive circuit (36) for setting the readout speed to be higher than the standard readout speed (col. 7, lines 55-65). Therefore, it would have been obvious to include a drive circuit that increases the shift rate of the photosensor array as taught in Hashimoto in the bi-directional CDD disclosed by Pool. Doing so would provide an alternate means for dumping a portion of the charges in the array.

Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Pool in view of Watanabe et al. US 6,351,284.

Pool teaches a CCD with bi-directional readout as in claim 1, but does not state that the step of dumping consists of discharging, simultaneously, a portion of charges from the array of photosensors.

Watanabe discloses a method and apparatus for driving a solid-state image sensor. The disclosed solid-state image sensor includes individual light-receiving pixels that can be simultaneously discharged (col. 2, lines 26-31). Therefore, it would have been obvious to include an array of photosensors that can be simultaneously discharged as taught in Watanabe in the bi-directional CDD disclosed by Pool. Doing so would provide an alternate means for dumping a portion of the charges in the array.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rentsch et al. (US 4,573,078) discloses a method for operating a CCD imager of the field transfer type. The material regarding charge dumping is pertinent material.

Elabd (US 5,272,535) discloses an image sensor with exposure control and video compression. The material regarding charge dumping is pertinent material.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kelly Jerabek whose telephone number is (703) 305-8659. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached at (703)-305-4929.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

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The fax number for submitting all Official communications is (703) 872-9306.

The fax number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at (703) 746-3059.

KLJ

VU LE
PRIMARY EXAMINER